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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,837	10/18/2001	Nabil G. Seidah	480848.9002	3590

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EXAMINER

MOORE, WILLIAM W

ART UNIT	PAPER NUMBER
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1652

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/830,837

Applicant(s)

SEIDAH ET AL.

Examiner

William W. Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-32,36-38,40-56,59-68,72-74 and 80-119 is/are pending in the application.
- 4a) Of the above claim(s) 84-91 and 110-113 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31,32,37,67 and 73 is/are allowed.
- 6) ☒ Claim(s) 30,36,40-52,54-56,59-66,72,80-83,92-109 and 114-119 is/are rejected.
- 7) ☒ Claim(s) 38,53,68 and 74 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Requirement for Sequence Rules Compliance

Applicant's Amendment filed November 5, 2004, introduces into claim 56 of the application a sequence disclosure encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this amendment to claim 56 of the application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the following reasons. Terms for orthoaminobenzoic acid and 3-nitrotyrosine are improperly appended to the Sequence Identifier SEQ ID NO:77 but must be submitted in a 13-amino acid sequence, e.g., SEQ ID NO:79, wherein they appear as the term "Xaa" in the first and thirteenth positions and wherein the information field <223> particularly defines the first and thirteenth positions as, respectively, orthoaminobenzoic acid and 3-nitrotyrosine. A new sequence listing in printed and computer-readable form must also be submitted should claim 56 be amended to recite, e.g., a new sequence identifier SEQ ID NO:79. See further, MPEP § 2424 and 37 CFR 1.82e(b) and associated table.

Claim Objections

Claim 52 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claim 52 depends from claim 51 but the amino acid sequences of peptides of SEQ IDs NOs: 7 and 8 are disclosed to be the same, Arg-(Xaa)₆, thus fails to further limit the claim from which it depends. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent form, or rewrite the claim in independent form.

Claim 53 is objected to because of the following informalities: The claim retains unnecessary punctuation after amendment, a colon following the word "sequence". Appropriate correction is required.

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Double Patenting

Claims 36 and 68 are objected to under 37 CFR 1.75 as being a substantial duplicate of claim 32. Claim 74 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 73. Although claim 32, from which claims 38 and 68 depend, is an appropriate alternative description of the 121-amino acid SKI-1 binding polypeptide of claim 31 even though both must have the same amino acid sequence, claims 38 and 68 cannot describe, alternatively or otherwise, a composition comprising a polypeptide of claim 32 or a nucleic acid sequence of claim 37 that differ in any respect from the nucleic acid sequence of claim 36 or the composition of claim 67. A nucleic acid-comprising composition of claim 74 is similarly identical to a nucleic acid-comprising composition of claim 73. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 46-49, 51-55, 59, and 60 remain rejected, and claim 66 is now also rejected, under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement for the reasons set forth in the communication mailed May 5, 2004. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Applicant's arguments filed November 5, 2004, have been fully considered but they are not persuasive. Applicant suggests that the specification need provide no verbatim support for the negative limitation constituting new matter recited in claims 46, 47, and

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51, and now also recited by Applicant's amendment to claim 66 filed November 5, 2004: the "proviso that [a cleaved] precursor is not . . . SKI-1". Applicant urges that disclosure of SKI-1's autocatalytic cleavage might somehow be transformed to become a provision that it not cleave itself. But the specification, including pages 6, 28, or 46 cited in the arguments filed November 5, 2004, does not discuss or suggest the exclusion of the SKI-1 precursor as a substrate. Indeed, the specification nowhere discloses, discusses, or suggests the exclusion of any substrate for cleavage by SKI-1, thus the argument that autocatalytic cleavage is excluded by analogy with the non-existent exclusion of other substrates is entirely erroneous. It is noted that the negative limitation, "that [the cleaved] precursor is not a sterol-regulatory element-binding protein (SREBP)" is also not disclosed in the specification, but is not new matter only because it was present in originally-filed claim 37, a claim resulting from a Chapter II amendment to Applicant's priority PCT document. Similarly absent from the specification, the negative limitation now recited in claim 51 as an excluded sequence identified as SEQ ID NO:78, is not new matter because it was in the originally-filed claim 22. These negative limitations in the originally-filed claims enjoy, however, only the priority of the October 18, 2001, filing date of the instant application because they were not present when Applicant's PCT application PCT/CA99/01058 was filed on November 4, 1999. Claims 48, 49, 52-55, 59, and 60 are included in this rejection because they depend from, thus incorporate, new matter recited in claims 47 and 51. The phrases "and is not SKI-1" and "or SKI-I or a part thereof" in claims 46, 47, 51 and 66 must be deleted to overcome this rejection.

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 46, 47, 56 and 66 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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The following new grounds of rejection are necessitated by Applicant's amendment filed November 5, 2004. Claims 46 and 47 are indefinite because the amendments present a pattern of lining-through and underlining indicating options for substrates in clauses (a) of these claims that are, in claim 46, "34) a complex . . .", and in claim 47, "43) a complex . . .", but both clauses (a) describe only three substrate options. Claim 46 is further indefinite because the amendment has removed the word "with" from clause (a) of the claim and it recites an incomplete method in that its single step does not indicate the occurrence of cleavage. Claim 47 is further indefinite in reciting in clause (a), "contacting said proteic precursor", because the preamble recites no "proteic" precursor. Amending claims 46 and 47 to rectify recitations of their clauses (a), to reintroduce "with" in clause (a) of claim 46, to state a further step in claim 46, e.g., "whereby cleavage of the substrate occurs", and to remove "proteic" from claim 47, will overcome this aspect of the rejection.

Claim 56 is indefinite because it is ambiguous where SEQ ID NO:77 recited in the claim is not disclosed to comprise either orthoaminobenzoic acid or 3-nitrotyrosine and because the placement of the term "SEQ ID NO:77" between symbols designating these compounds cannot clearly describe the intended subject matter and also fails to comport with the Sequence Rules for the reasons set forth at page 2 hereinabove, which discussion describes how claim 56 and the Sequence Disclosure may be amended to overcome this aspect of the rejection.

Claim 66 is indefinite because the clauses now recited after the claim preamble are ambiguous where the first provides only a single option for an "SKI-1 enzyme" that is encoded by a specific nucleotide sequence but the second recites "a catalytic part . . . unique to SKI-1 enzyme and encoded by the corresponding sequence of SEQ ID NO:5" yet provides no basis for determining correspondence to any "unique part". Claim 66 is

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further indefinite in reciting, in its closing clause, "the catalytic part of SKI-1, or the active variant of the SKI-1 enzyme of the catalytic part" because the clause following the claim preamble now provides for only a single form of SKI-1 and the second clause following the claim preamble provides for nothing in particular. This aspect of the rejection may be overcome by deleting the second clause of claim 66 and the recitation "the catalytic part of SKI-1, or the active variant of the SKI-1 enzyme of the catalytic part" in the final clause of the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 30, 36, 40-52, 54, 55, 59, 60, 65, 66, 72, 80-83 and 92-109, and the new claims 114-119, are rejected under 35 U.S.C. § 102(e) as anticipated by Brown et al., of record, essentially for the reasons set forth in the communication mailed May 5, 2004.

Applicant's arguments filed November 5, 2004, have been fully considered but they are persuasive only with respect to claims 31, 32, 37, 38, 53, 56, 67, 68, 73 and 74. Applicant suggests that the human protease disclosed in SEQ ID NO:3 of Brown et al. cannot anticipate subject matters of claims 30, 65, 92-109 and 114-119. But claims 30, 65, 92-97 and 104-109 do not require that a soluble or a purified SKI-1 polypeptide, or a composition comprising same, consist only of the amino acid sequence regions of SEQ ID NO:6 recited in the claims, thus the polypeptide of SEQ ID NO:3 of Brown et al. is just as much "defined by" amino acid sequences recited in claims 30 and 92-97 as the identical polypeptide of SEQ ID NO:6 herein is "defined by" an amino acid sequence recited in claims 30 and 92-97. Brown et al. anticipate claims 65 and 104-109 in disclosing a composition comprising their human protease of SEQ ID NO:3 at col. 7

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lines 13, as a component expressed by a host cell prior to purification. The polypeptide-encoding nucleic acid sequences of claims 36 and 98-103 are equally defined by corresponding nucleic acid sequences of SEQ ID NO:4 of Brown et al., who disclose as well the vectors, compositions comprising nucleic acids and vectors, host cells and method of making of claims 40-45, 72, 80-83 and 114-119 at col. 4, lines 24-35, because all comprise "the nucleotide sequence of SEQ ID NO:4". As previously noted, the limitation "named SKI-1" in the claims provides no patentable distinction where the amino acid sequence of the Site-1 protease set forth in SEQ ID NO:3 of Brown et al. is identical to that of the SKI-1 protease set forth in SEQ ID NO:6 herein.

Brown et al. disclose a process of claim 66 in demonstrating that the human Site-1 protease cleaves many substrates, including labeled, fluorogenic, peptides comprising the amino acid sequences of SEQ IDs NOs:7 and 8 of claims 51, 52, 54 and 55 herein, see, e.g., Figures 22-24 and SEQ IDs NOs:55 and 56 of Brown et al., which are neither sterol-regulatory element-binding proteins nor SEQ ID NO:78 herein, meeting limitations of claims 46-48. Brown et al. anticipate claim 46 in disclosing, col. 17, lines 54-14, that their soluble SKI-1 having an amino terminus at position 187 of SEQ ID NO:6 herein cleaves artificial peptide substrates having sequences of native substrates of SKI-1, one of which is not present in a SREBP and the other of which is a peptide substrate no longer within a SREBP. Brown et al. further disclose, columns 3-4, 66-71 and Figures 22 and 24, the method of claim 49 and related methods of claims 59 and 60.

Allowable Subject Matter

Claims 31, 32, 37, 38, 53, 56, 67, 68, 73 and 74 are allowable over the prior art of record. Brown et al., discussed above, is the closest prior art and teach that cellular proteolysis of a portion of the SKI-1 prodomain results in the removal of an amino proximal peptide region to form a catalytically active membrane-bound protease with an

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amino terminus at position 138. But Brown et al. teach away from preparation of a polypeptide comprising the amino acid sequence, and having the binding properties, recited in claim 31 because they do not suggest that the cleaved fragment having a carboxyl terminus at position 137 could still retain the amino acid sequence from position 17 to position 22 of the human Site-1 protease set forth in their SEQ ID NO:6 and also be a Site-1 protease binding polypeptide. Brown et al. also teach away from preparation of a substrate having the amino acid sequence of SEQ ID NO:77 required by claims 53 and 55. Claim 56 is subject to rejection above under 35 U.S.C. § 112, first paragraph, claims 38, 68 and 74 are objected to for double patenting above, and claim 53 is objected to under 37 CFR 1.75(c), as being of improper dependent form as well as for informalities, thus claims 31, 32, 37, 67 and 73 are allowed herewith.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

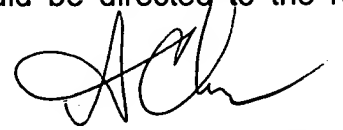
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William W. Moore whose telephone number is now 571.272.0933. The examiner can normally be reached between 9:00AM and 5:30PM EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura Achutamurthy, can now be reached at 571.272.0928. The fax phone number for all communications for the organization where this application or

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proceeding is assigned is now 571.273.8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is now 571.272.1600.

William W. Moore
January 21, 2005



PONNATHAPUDI ACHUTHAMURTHY
SUPERVISORY PATENT EXAMINER
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